

## Carbon Nanotube Electron Sources for Air Purification, Phase I

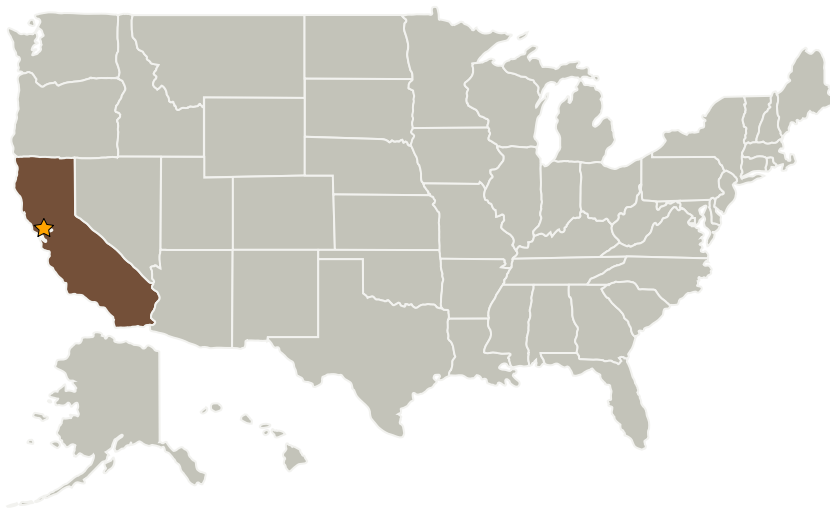
Completed Technology Project (2006 - 2006)



## Project Introduction

Pollution of the environment is a world wide concern and is the subject of broadly based R&D into means of prevention and remediation. The innovation proposed here is the design of an electron beam source for cleansing air. Bombardment by electrons has proven to be effective in destroying a wide spectrum of chemical and biological pollutants. Maintaining air purity becomes particularly critical in densely populated closed spaces. Such as occupied buildings, passenger transport vehicles, orbiting space vehicles and lunar or planetary exploration stations. The work proposed here is to appraise the feasibility of downsizing this effective technology to meet the much more restrictive cost, weight and reliability requirements attendant to commercial passenger transportation and manned space exploration. Key to meeting those requirements are carbon nanotube (CNT) field emitters to replace the thermal electron sources as was done, by MPT, in developing the cold cathode x-ray tubes subsequently produced by Oxford X-ray Technology. MPT, working with Valence Corporation and others, have developed systems for eliminating odors and chemical components from air streams exhausted from sewerage treatment, large scale painting and food processing plants and environmental remediation installations.

## Primary U.S. Work Locations and Key Partners



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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Ames Research Center (ARC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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| Organizations Performing Work | Role                    | Type        | Location                  |
|-------------------------------|-------------------------|-------------|---------------------------|
| ★ Ames Research Center(ARC)   | Lead Organization       | NASA Center | Moffett Field, California |
| inXitu, Inc.                  | Supporting Organization | Industry    | Mountain View, California |

## Primary U.S. Work Locations

California

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX06 Human Health, Life Support, and Habitation Systems
  - └ TX06.4 Environmental Monitoring, Safety, and Emergency Response
    - └ TX06.4.4 Remediation